# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005


Job No.: CTCE/BBMP/W.No.06/MBH/CEMENT/2014-15

Date: 15.07.2014

## TEST REPORT

| | | |
|---|---|---|
| **CLIENT** | : | **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore. |
| **AGENCY** | : | **Mr. M.B. Hombal**, Contractor, Bangalore. |
| **NAME OF THE WORK** | : | Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore. |
| **REFERENCE** | : | AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014 |
| **SAMPLE ID** | : | Cement |
| **SAMPLES SUPPLIED BY** | : | AGENCY |

The results of the tests conducted on the cement sample are as follows:

| Sl.No | Descriptions | Test Method as per IS | Test Result | Requirements as per IS: 8112-1989 |
|---|---|---|---|---|
| 1 | a) Initial Setting Time | IS-4031 (Part -5) | 135 Minutes | Not Less than 30 Minutes |
| | b) Final Setting Time | IS-4031 (Part -5) | 460 Minutes | Not More than 600 Minutes |
| 2 | Soundness | IS-4031 (Part 3) by the Le-Chatelier method | 1 mm | Not more than 10 mm |
| 3 | Standard Consistency | IS-4031 (Part -4) | 26.00 % | - |

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Job No.: CTCE/BBMP/W.No.06/MBH/SAND/2014-15 : 15.07.2014

## TEST REPORT ON FINE AGGREGATES (SAND)
## IS 383-1970 (RA- 2002)

**Client** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

**Agency** : **Mr. M.B. Hombal,** Contractor, Bangalore.

**Name of Work** : Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore.

**Reference** : AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014

Date of Testing : 15.07.2014

Material : Sand Total Wt. of Aggregates in gms **2000**

| Is Sieve Size in mm | Weight Retained (gm) | Retained Weight in % | Cumulative Retained Weight in % | Cumulative Weight Passing in % | Spec.Limits For Zone-II |
|---|---|---|---|---|---|
| 10 | 0 | 0 | 0 | 100 | 100 |
| 4.75 | 99 | 4.95 | 4.95 | 95.1 | 90-100 |
| 2.36 | 208 | 10.40 | 15.35 | 84.7 | 75-100 |
| 1.18 | 524 | 26.20 | 41.55 | 58.5 | 55-90 |
| 600 Micron | 413 | 20.65 | 62.20 | 37.8 | 35-59 |
| 300 Micron | 497 | 24.85 | 87.05 | 13.0 | 8-30 |
| 150 Micron | 205 | 10.25 | 97.30 | 2.7 | 0-10 |

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Job No.: CTCE/BBMP/W.No.06/MBH/AGG/2014-15 : 15.07.2014

## TEST REPORT ON COARSE AGGREGATES
## IS 383-1970 (RA- 2002)

**Client** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

**Agency** : **Mr. M.B. Hombal,** Contractor, Bangalore.

**Name of Work** : Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore.

**Reference** : AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014

Date of Testing : 15.07.2014

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **25700**

| Is Sieve Size in mm | Weight Retained (gm) | Retained Weight in % | Cumulative Retained Weight in % | Cumulative Weight Passing in % | Spec.Limits |
|---|---|---|---|---|---|
| 80 | 0 | 0 | 0 | 100 | 100 |
| 40 | 992 | 3.86 | 3.86 | 96.14 | 95-100 |
| 20 | 15458 | 60.15 | 64.01 | 35.99 | 30-70 |
| 10 | 6235 | 24.26 | 88.27 | 11.73 | 10-35 |
| 4.75 | 2575 | 10.02 | 98.29 | 1.71 | 0-5 |

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Building & Highway Material Testing Laboratory

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005


Job No.: CTCE/BBMP/W.No.06/MBH/STEEL/2014-15 15.07.2014

## TEST REPORT ON REINFORCEMENT STEEL

| | | |
|---|---|---|
| Client | : | **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore. |
| Agency | : | **Mr. M.B. Hombal**, Contractor, Bangalore. |
| Name of the work | : | Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore. |
| Reference | : | AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014 |
| Date of Test | : | 15.07.2014 |
| Technical Reference | : | IS: 1786-2008 |

| Sl. No | Nominal size (dia) (mm) | Mass per metre (Kg/mtr) | TENSILE STRENGTH | | | Bend Test | Rebend Test |
|---|---|---|---|---|---|---|---|
| | | | 0.20% proof stress/Yield stress N/mm² | Tensile strength (Ultimate stress) N/mm² | Elongation percent gauge length | | |
| 1 | 10 | 0.62 | 513 | 549 | 13.15 | O.K | O.K |

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**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005


Job No.: CTCE/BBMP/W.No.06/MBH/WMM/Gradation/2014-15 15.07.2014

## GRADATION FOR WMM
## MORTH TABLE-400-11

**Client** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

**Agency** : **Mr. M.B. Hombal,** Contractor, Bangalore.

**Name of Work** : Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore.

**Reference** : AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014

Date of Testing : 15.07.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **25600**

| Is Sieve Size in mm | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Spec.Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 1020 | 1020 | 4.0 | 96.0 | 95-100 |
| 22.4 | 6180 | 7200 | 28.1 | 71.9 | 60-80 |
| 11.2 | 5325 | 12525 | 48.9 | 51.1 | 40-60 |
| 4.75 | 4260 | 16785 | 65.6 | 34.4 | 25-40 |
| 2.36 | 3780 | 20565 | 80.3 | 19.7 | 15-30 |
| 0.600 | 2365 | 22930 | 89.6 | 10.4 | 8-22 |
| 0.075 | 2385 | 25315 | 98.9 | 1.1 | 0-8 |

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Job No.: CTCE/BBMP/W.No.06/MBH/CUBE/2014-15 26.07.2014

## TEST REPORT ON CONCRETE CUBES

| | |
|---|---|
| Client | : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore. |
| Agency | : **Mr. M.B. Hombal,** Contractor, Bangalore. |
| Name of the work | : Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore. |
| Reference | : AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014 |
| Sample ID | : Drain Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| Grade of Concrete | : $M_{20}$ |
| Compressive Strength as on | : $7^{th}$ day |

| Sl.No. | Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 19.07.2014 | 26.07.2014 | 8.163 | 336.5 | 14.96 |
| 2 | 19.07.2014 | 26.07.2014 | 8.392 | 362.7 | 16.12 |
| 3 | 19.07.2014 | 26.07.2014 | 8.258 | 342.8 | 15.24 |

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# CIVIL-TECH CONSULTANTS AND ENGINEERS

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Job No.: CTCE/BBMP/W.No.06/MBH/SDBC/Bitumen/2014-15 23.07.2014

## BITUMEN CONTENT AND GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

### AASHTO T 164 & AASHTO T 30

| | |
|---|---|
| CLIENT | **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore. |
| AGENCY | **Mr. M.B. Hombal,** Contractor, Bangalore. |
| NAME OF THE WORK | Improvements to Roads and Drains at Thanisandra Village in Ward No.06 Byatarayanapura Sub Division, BBMP, Bangalore. |
| REFERENCE | AEE/BTP/(WO)/36/2014-15 Dated: 15.07.2014 |
| SAMPLE I/D | Roads and Drains at Thanisandra Village in Ward No.06 |
| DATE OF TESTING | 23.07.2014 |

**BITUMEN CONTENT DETERMINATION**

| Description | Trail 1 | Trail 2 |
|---|---|---|
| 1. Weight of Mixture before Test, g | 500 | 500 |
| 2. Weight of Mixture after Test, g | 475 | 476 |
| 3. Weight of Asphalt and Mineral matter Extracted, | - | - |
| 4. Weight of Mineral Matter, g. | - | - |
| 5. Weight of Ash, g | | |
| 6. Weight of Bitumen Extracted, g. (corrected) | 25 | 24.00 |
| 7. Bitumen content in % | 5.00 | 4.80 |
| 8. Average | **4.90** | |

**GRADATION AFTER EXTRACTION**

| SIEVE SIZE | Trail 1 | | | | JOBMIX |
|---|---|---|---|---|---|
| mm | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | Gradation |
| 13.2 | 0 | 0 | 0 | 100 | 100 |
| 9.5 | 38.62 | 8.13 | 8.13 | 91.87 | 90-100 |
| 4.75 | 266.8 | 56.17 | 64.30 | 35.70 | 35-51 |
| 2.36 | 54.87 | 11.55 | 75.85 | 24.15 | 24-39 |
| 1.18 | 39.87 | 8.39 | 84.24 | 15.76 | 15-30 |
| 0.3 | 27.54 | 5.80 | 90.04 | 9.96 | 9-19 |
| 0.075 | 26.32 | 5.54 | 95.58 | 4.42 | 3-8 |

| SIEVE SIZE | Trail 2 | | | | JOBMIX |
|---|---|---|---|---|---|
| mm | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | Gradation |
| 13.2 | 0 | 0 | 0 | 100 | 100 |
| 9.5 | 40.15 | 8.43 | 8.43 | 91.57 | 90-100 |
| 4.75 | 262.9 | 55.23 | 63.67 | 36.33 | 35-51 |
| 2.36 | 53.87 | 11.32 | 74.98 | 25.02 | 24-39 |
| 1.18 | 41.59 | 8.74 | 83.72 | 16.28 | 15-30 |
| 0.3 | 28.26 | 5.94 | 89.66 | 10.34 | 9-19 |
| 0.075 | 29.48 | 6.19 | 95.85 | 4.15 | 3-8 |

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